Socio-Economic Vulnerabilities to Drivers of Ecosystem Change

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Funded by: US EPA ReVA Program

Questions to Address:

1. **What issues strongly link household and government concerns to ecosystem vulnerabilities?**
2. **Can we objectively define measures that are resource-related and controllable?**
3. **Can we measure these factors at the regional scale? with available data?**

Approach

- Current status of socio-economic conditions and quality of life

  State

- Leading indicators of population redistribution and changing demographics / development type

  Pressure

- Implications for managing land use and natural resources

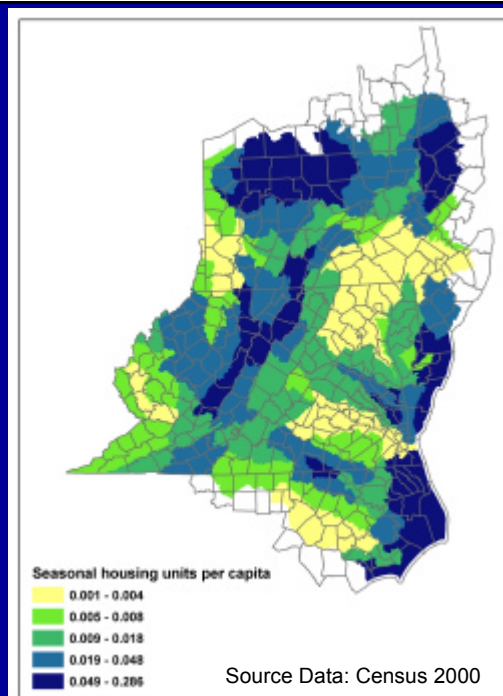 Response

Quality of Life Indicators

- Household Economic Condition
  - Adequate Income & Job Options
  - Housing Affordability and Home Values
- Health
  - Air, Water, & Land Pollution
  - Safety (Food, Personal)
- Natural Amenities contributing to Quality of Life
  - Open space, parks, recreation options
- Vibrant community
- Protection from Future Risks

Data Sources

- US Census: Population, Economic, Agricultural
- Bureau of Economic Analysis
- Conservation Biology Institute
- ReVA partners (Josh Lawler, US EPA)
- Private databases: IMPLAN, Woods & Poole
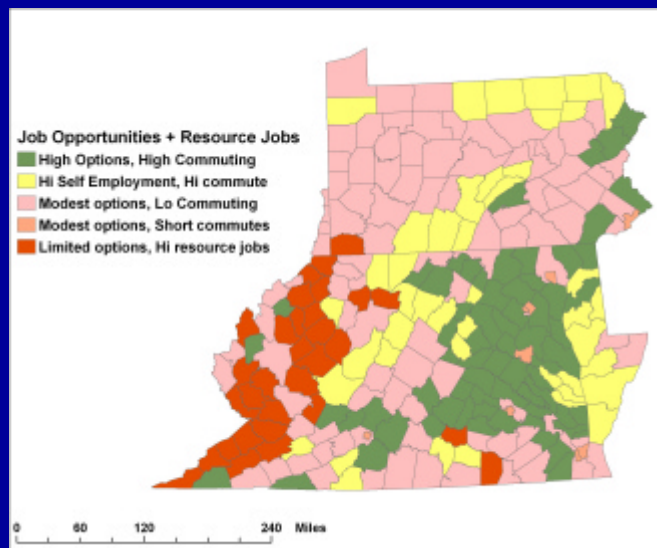- USGS

Measurement Units and Reaggregation

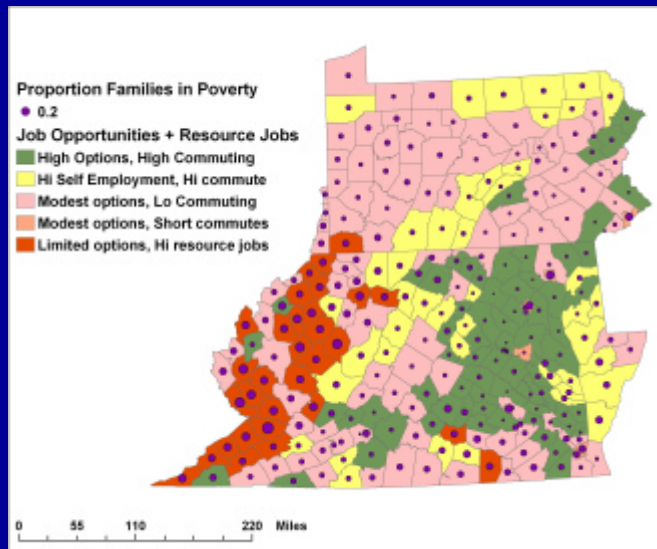Seasonal Housing Units per Capita within Watersheds (quintiles)

Seasonal housing units per capita
- 0.001 - 0.004
- 0.005 - 0.008
- 0.009 - 0.018
- 0.019 - 0.048
- 0.049 - 0.286

Source Data: Census 2000

Job Opportunites

- Unemployed
- Professional Occupations
- Self-employed
- Diversity of jobs
- Travel time to work
- Net commuting
- Resource Jobs (agriculture, fisheries, forestry)
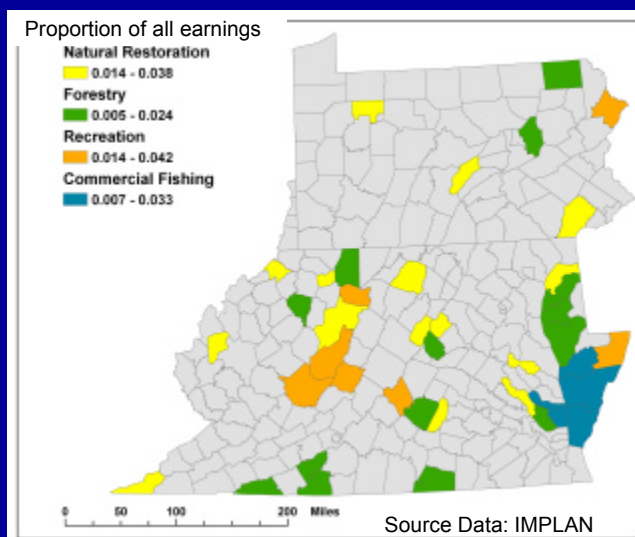- Per capita income
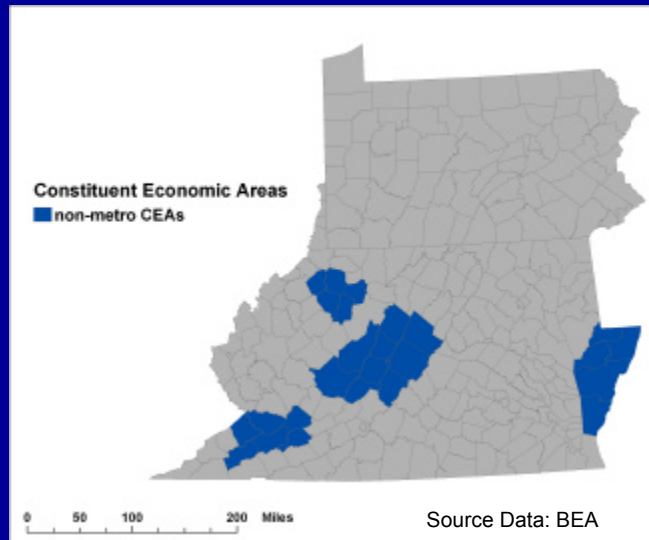
Job Opportunity Ratings

Job Opportunities + Resource Jobs
- High Options, High Commuting
- Hi Self Employment, Hi commute
- Modest options, Lo Commuting
- Modest options, Short commutes
- Limited options, Hi resource jobs

0   60   120   240 Miles

Job Opportunity Ratings
Compared with Proportion Families in Poverty

Proportion Families in Poverty
● 0.2
Job Opportunities + Resource Jobs
High Options, High Commuting
Hi Self Employment, Hi commute
Modest options, Lo Commuting
Modest options, Short commutes
Limited options, Hi resource jobs

0   55   110   220   Miles

Direct Economic Dependence on Natural Resources
(Top quintile of resource dependence)

Proportion of all earnings
Natural Restoration
0.014 - 0.038
Forestry
0.005 - 0.024
Recreation
0.014 - 0.042
Commercial Fishing
0.007 - 0.033

0   50   100   200   Miles

Source Data: IMPLAN

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Economically Isolated Areas

Constituent Economic Areas
■ non-metro CEAs

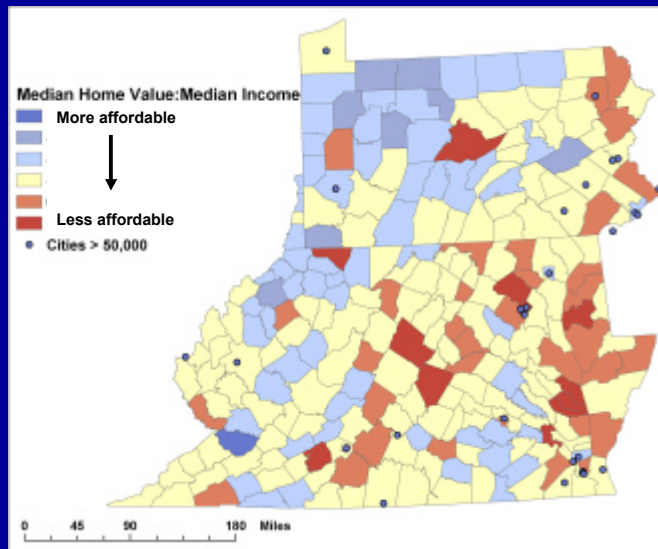0   50   100   200   Miles

Source Data: BEA

Housing Opportunities

- Owner-occupied
- Rent > 30% of income (stressed households)
- Ratio of median home value to median per capita income (affordability)
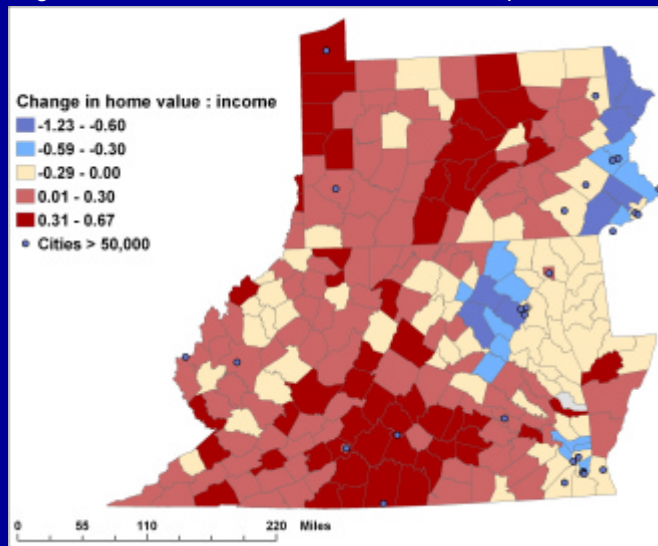- Change in median home value : income (trends in affordability)
- Net commuting

Housing Affordability
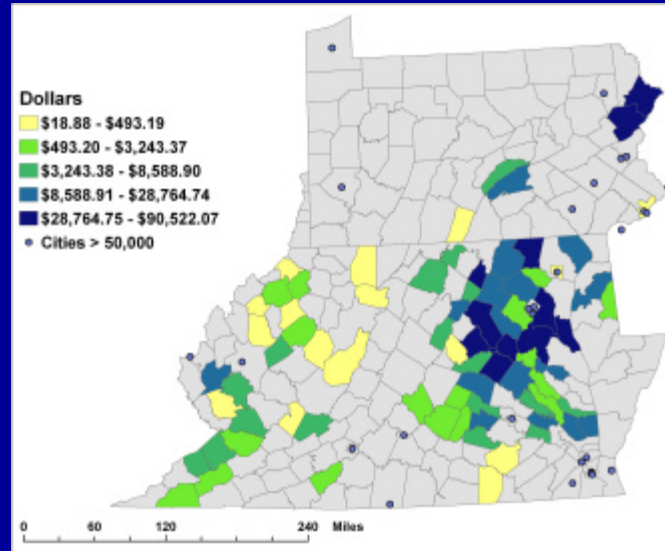Ratio of Median Home Value to Median Per Capita Income

Trend in Housing Affordability
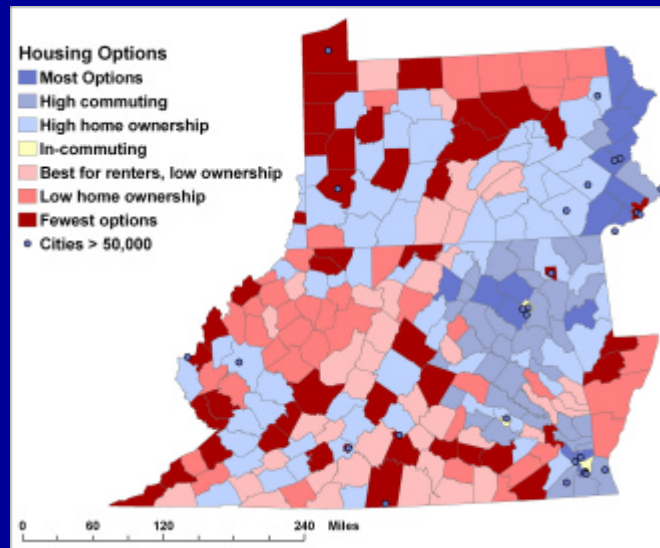Change in Median Home Value to Median Per Capita Income Ratio

Time Costs of Sprawl:
Value of extra time spent commuting from "sprawl" areas

Dollars
- $18.88 - $493.19
- $493.20 - $3,243.37
- $3,243.38 - $8,588.90
- $8,588.91 - $28,764.74
- $28,764.75 - $90,522.07
- Cities > 50,000

0   60   120   240   Miles

Source Data: Census 2000

Housing Option Ratings

Housing Options
- Most Options
- High commuting
- High home ownership
- In-commuting
- Best for renters, low ownership
- Low home ownership
- Fewest options
- Cities > 50,000

0   60   120   240   Miles

Future Trends: Natural Amenities as Drivers of New Settlement Patterns

- Areas formerly characterized by
  - Population decline or slow growth
  - Declining dependence on resource jobs (agriculture, forestry, fisheries)
- Now attracts:
  - Businesses not tied to particular resources or markets
  - Amenity-seeking retirees
  - Self-employed or "distance" commuters
 - "Natural restoration" industries

Indicators of Amenities

| Desirable Features	Markers of Change

• Suburban Residential
  – Affordable housing
  – Low Crime
	• Suburban Residential
	  – More out-commuting
	  – Longer travel to work

• Rural Amenity-seekers
  – Seasonal homes
  – Protected area
  – Area in water
	• Rural Amenity-seekers
	  – Increasing % retirees
	  – Increasing seasonal homes

Residential Development Risk
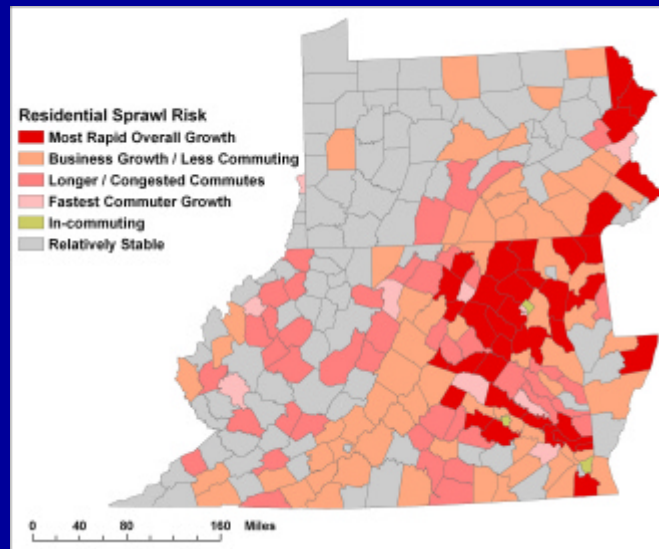
Residential Development Risk
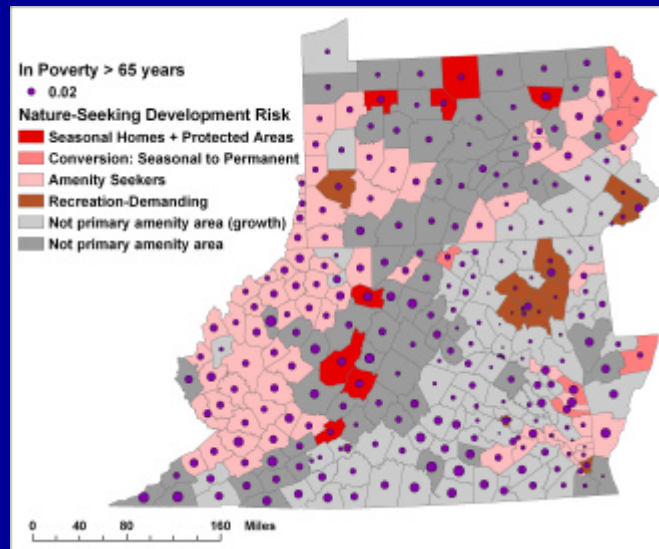Compared with Percentage Change in Jobs (1990-2000)
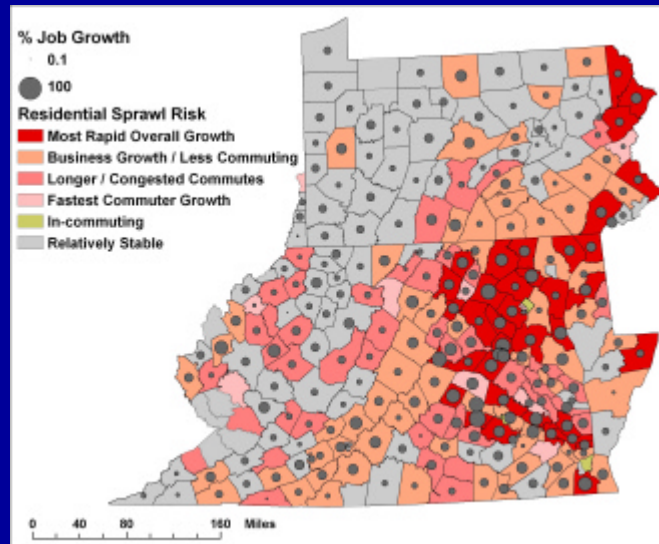
Protected Area:
Federal, State, County and Private Land Holdings
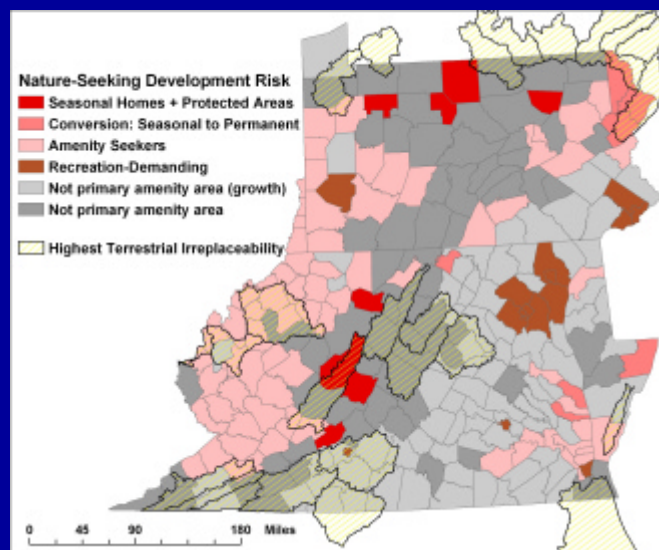(incomplete data)
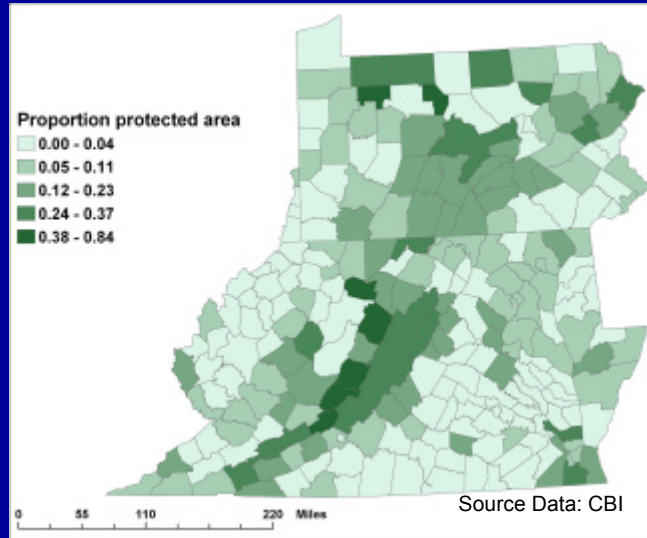
Amenity-Seeking Development Risk
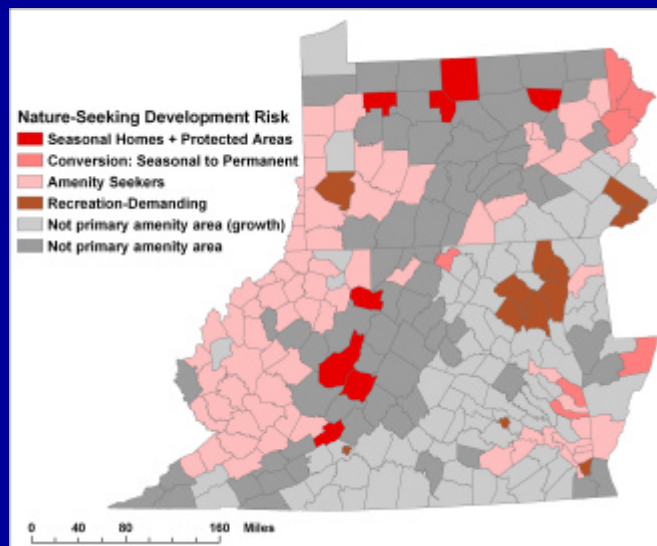
Amenity-Seeking Development Risk
Compared with Proportion of Individuals > 65 in Poverty

Highest Terrestrial Irreplaceability and
Risk from Amenity-Driven Development

Conclusions for ReVA/MAIA region

1. Regional data sets can be used to track conditions and potential drivers of change
2. Direct economic links to natural resources are weak overall and declining, but resource jobs are locally important
3. Evidence of emerging risks to ecosystems from amenity-seeking migrants